International Symposium on the Sociology of Words
Lexical Meaning, Combinatorial Potential and Computational Implementation

Construction Grammar vs. Lexical Grammar:
A case study of the modal load in *if*-conditionals

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Motivation

Corpus based examinations of the *modal load* (i.e. extent of modal marking) in *if*-conditionals in the written BNC (Gabrielatos 2007, 2010) have revealed that they have a significantly higher modal load than

- average
- concessive conditionals with *even if* and *whether*,
- indirect interrogatives with *if* and *whether*,
- non-conditional constructions with *when* and *whenever*
- conditionals with other subordinators (*assuming, in case, on condition, provided, supposing, unless*).

Is this due to ...

- the semantic preference of the lexical item *if?* (LG)
- the semantic make-up of *if*-conditional constructions? (CxG)

Why the particular theories?

- Both take into account ...
  … meaning (semantic **and** pragmatic)
  … lexical **and** grammatical elements

- Main difference ...
  … LG gives clear prominence to lexis over grammar
  … CxG accounts for both in a balanced way
  -- in fact, it posits no distinction.

Data: random samples

Source: written BNC; approx 1000 s-units each.

- S-units
  - Estimation of the average frequency of modal marking in written British English (baseline);
- Non-conditional constructions, taken collectively;
- Conditional constructions with *assuming, if, in case, provided, supposing, unless*
- Conditional-concessive constructions with *even if* and *whether*;
- Indirect interrogative (non-conditional) constructions with *if* and *whether*;
- Constructions with *when* and *whenever* (used as conjunctions)
  - They have been presented as synonymous with unmodalised *if* conditionals (e.g. Athanasiadou & Dirven, 1996: 617, 1997: 62; Palmer, 1990: 174-175).

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I am grateful to
Stefan Evert (University of Osnabrück) and
Neil Millar (University of Birmingham)
for help with the regular expressions

Modal Load

The interaction of two complementary metrics

Modal Density

Modalisation Spread

Modal Density

Definition	Average number of modal markings per clause.
Expression	Number of modal markings per 100 clauses. (%)
Utility	Helps comparisons between samples by normalising for the complexity of the constructions in each.

(Gabrielatos, 2008, 2010)

Lexical Density:

- The average number of content words per clause (Halliday, 2004: 654-655).
- The percentage of the tokens in a text that are content words (Ure, 1971).

Modal density may not be enough

- A high MD may be the result of a number of heavily modalised constructions in the sample.
  - If you live in the Wallingford area and have a railway interest perhaps you might like to join this enthusiastic group and give them a few hours of your time. [CJ7 109]
- In such a case, a sample might show a high MD (relative to another sample) despite a large proportion of constructions in it being modally unmarked.

Modalisation Spread

Definition	Proportion of constructions that carry at least one modal marking.
Expression	Proportion (%) of modalised constructions.
Utility	Corrects for heavily modalised constructions in the sample.

(Gabrielatos, 2010)

Spread:

- The proportion of corpus speakers who use a particular language item (Gabrielatos & Torgersen, 2009; Gabrielatos et al., 2010).

Why don't we just calculate modal markings per X number of words?

Words vs. opportunities

		Modals	Words	Clauses
(1)	If we could keep to a blue theme for leotards it would make a lovely contrast with the scarves. [KAF 72]	2	19	2
(2)	If you are worried or have questions about the illness, try to find someone you can trust to talk to about it. [CJ9 2271]	2	22	4

- Words: (1) and (2) are fairly equally modalised (10.5% and 9.1% respectively)
- Clauses (MD): (1) has **twice** the MD of (2) (100 and 50 respectively)

Relevant quantitative findings

(written BNC - estimations)

- On average (written BrE), we can expect…

…about **three** modal markings per **ten clauses** (MD=27.7).

…about **40%** of **s-units** to be modalised (MS=40.9).

Written BrE is fairly heavily modalised to start with

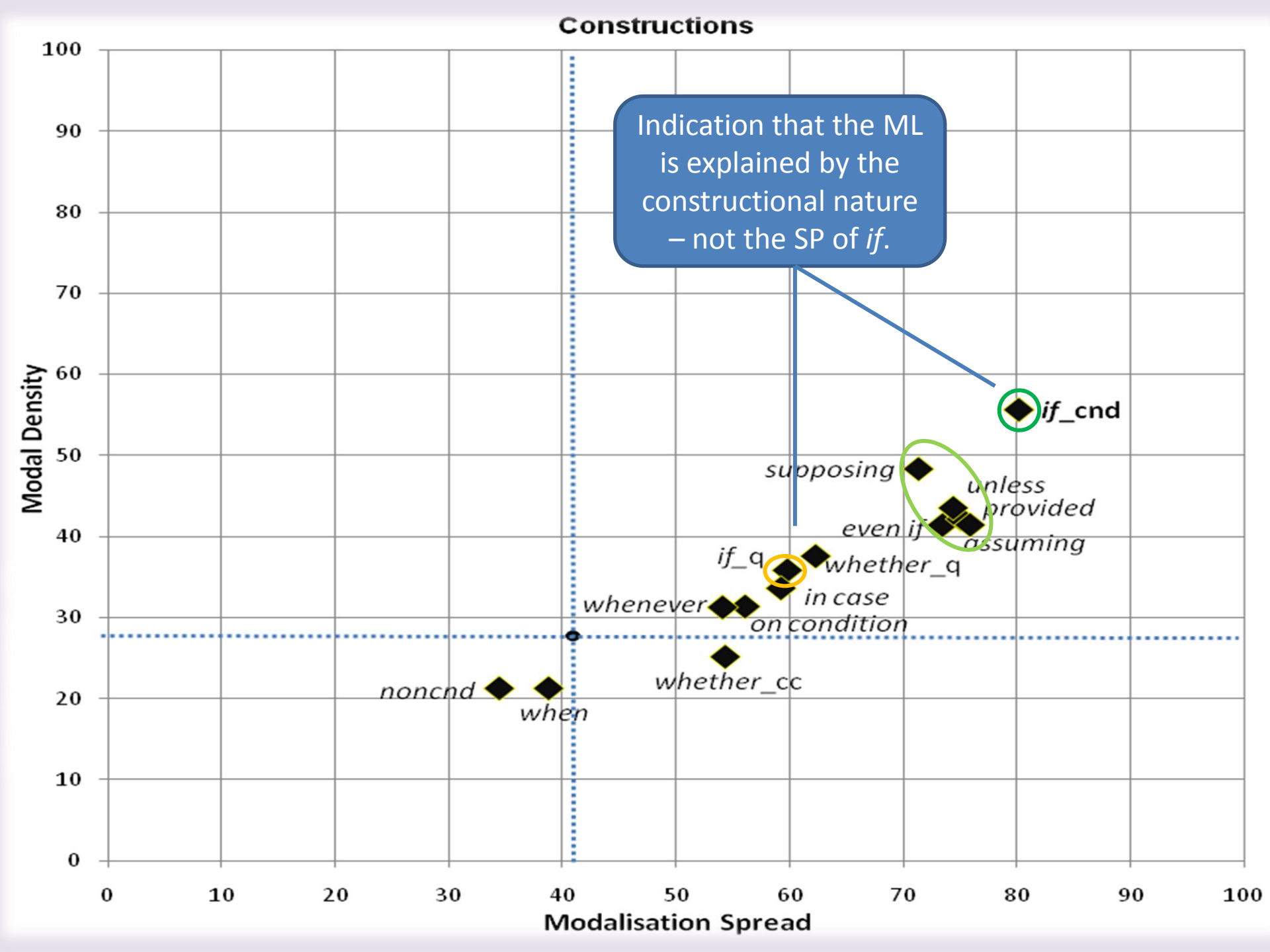
- About **85%** of *if tokens* are subordinators of **conditional constructions**. The rest are subordinators of **indirect interrogatives**.

The word *if* is not a 'free agent'

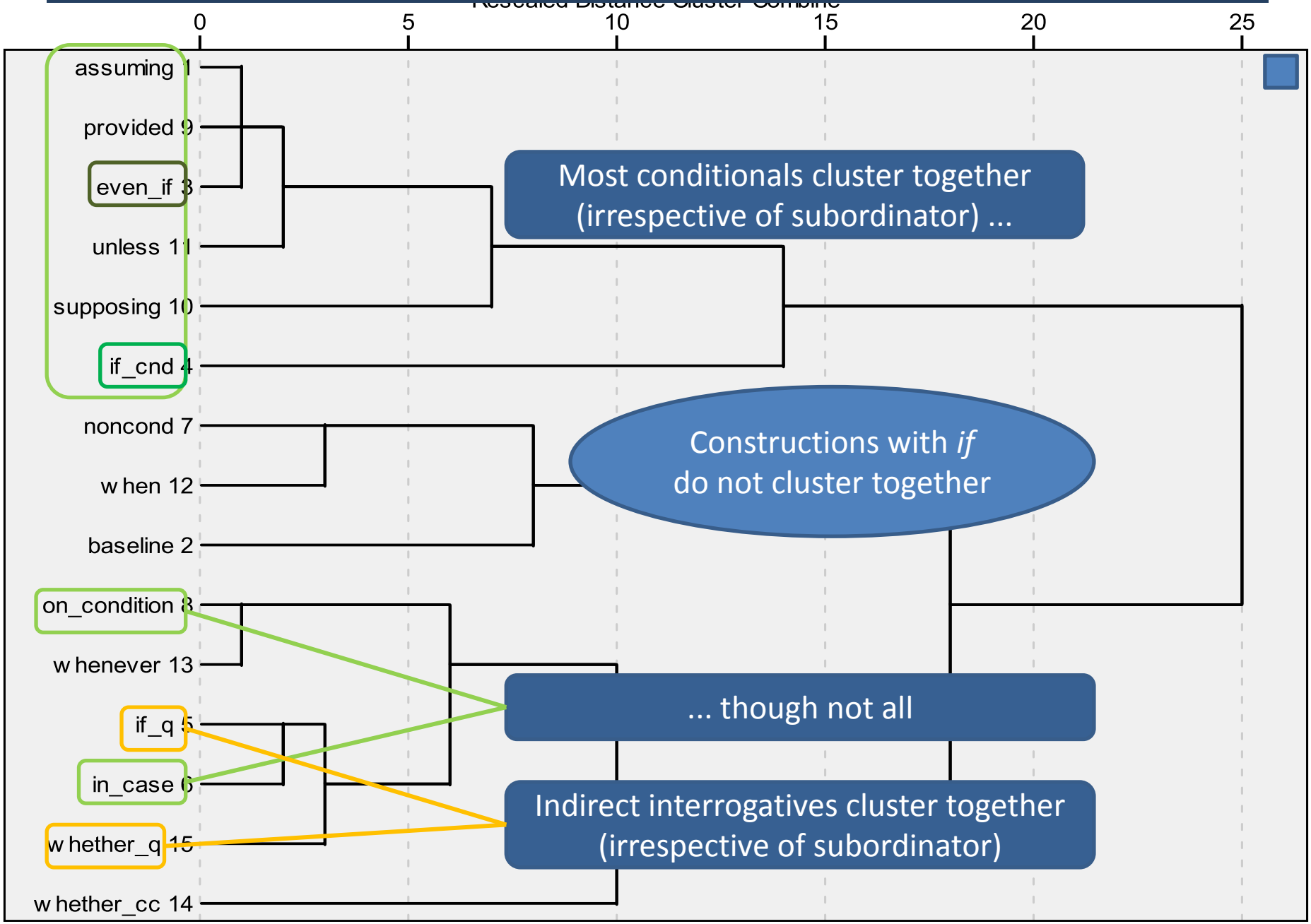
- ***If*-conditionals** account for about **80%** of all conditional construction tokens.

They are excellent candidates for a case study

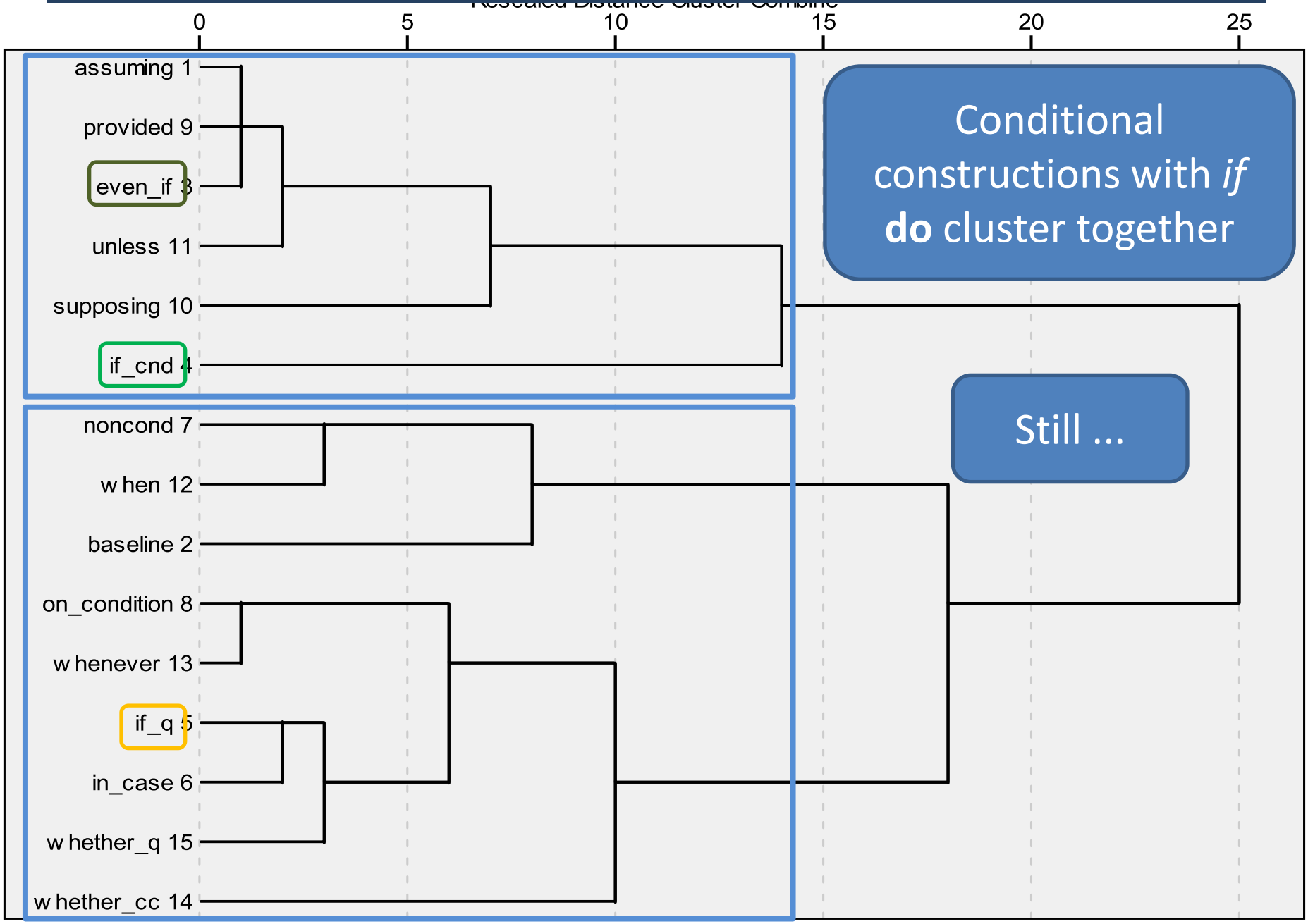
Modal Load comparisons


Constructions
Indication that the ML is explained by the constructional nature – not the SP of *if*.
*if*_cnd
supposing
unless
provided
even if
assuming
if_q
whether_q
in case
whenever
on condition
whether_cc
noncnd
when
Modal Density
Modalisation Spread
0
10
20
30
40
50
60
70
80
90
100

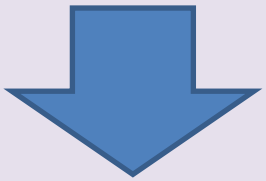
Constructions: ML Clustering



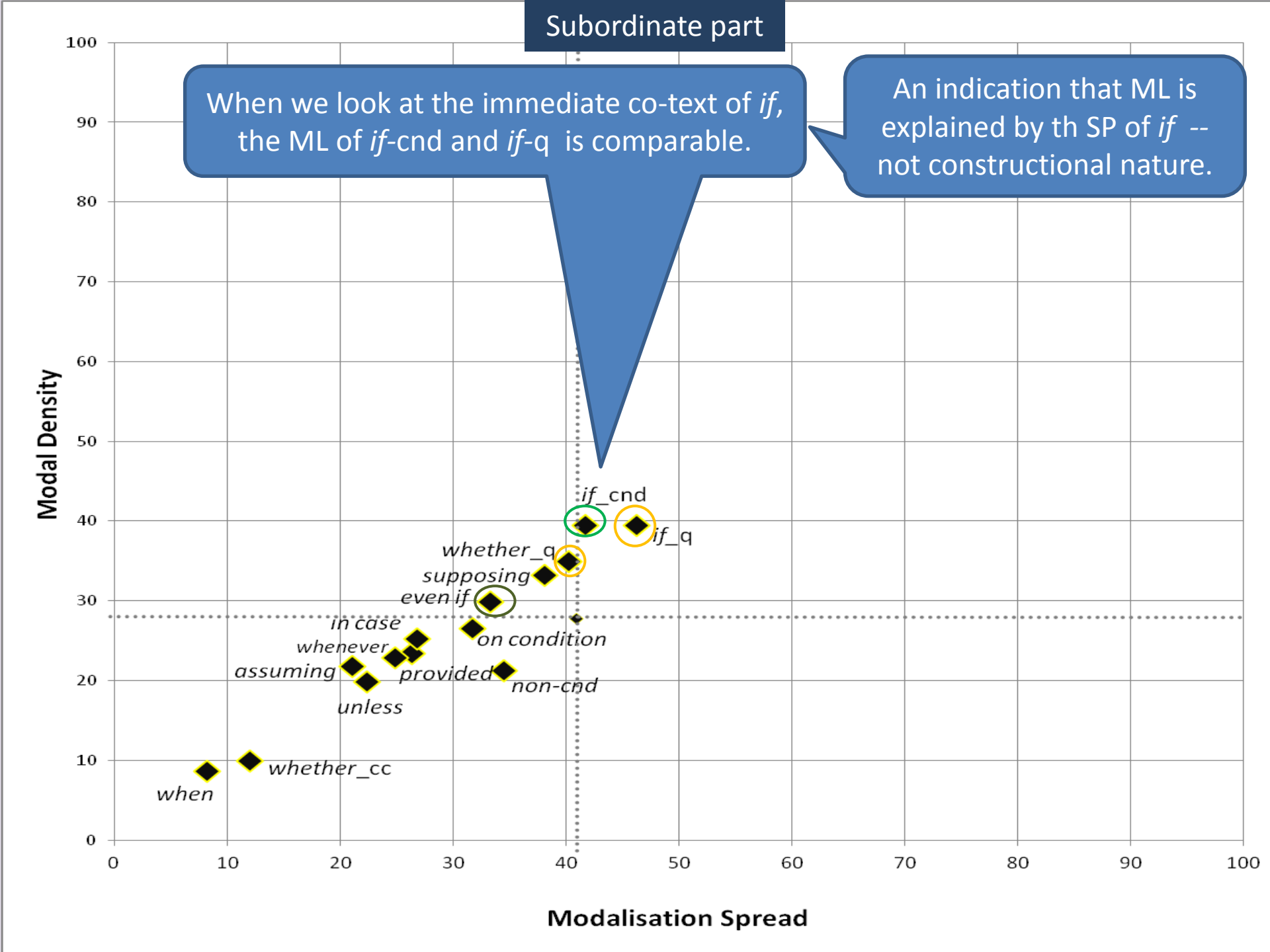
Constructions: ML Clustering

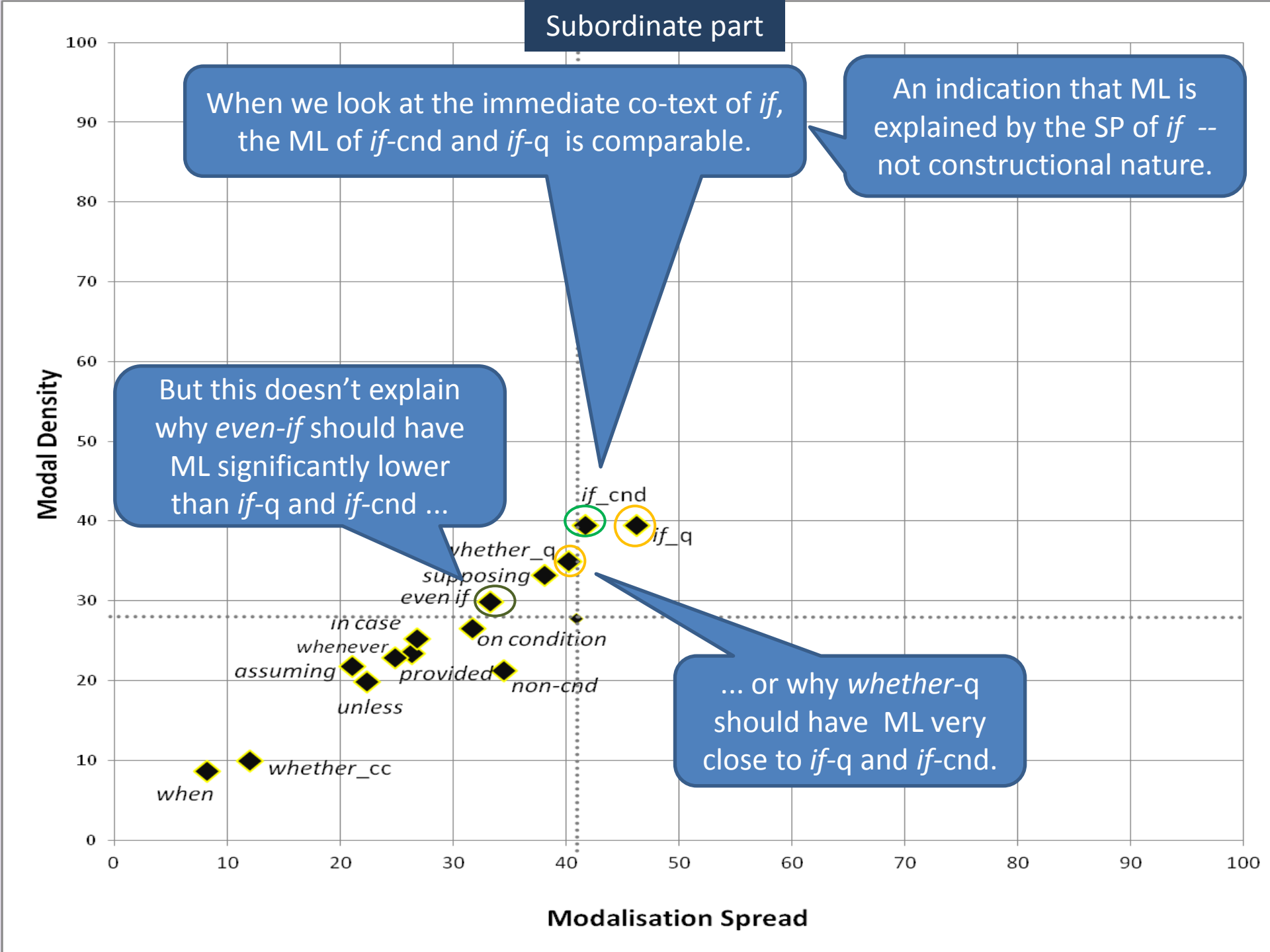


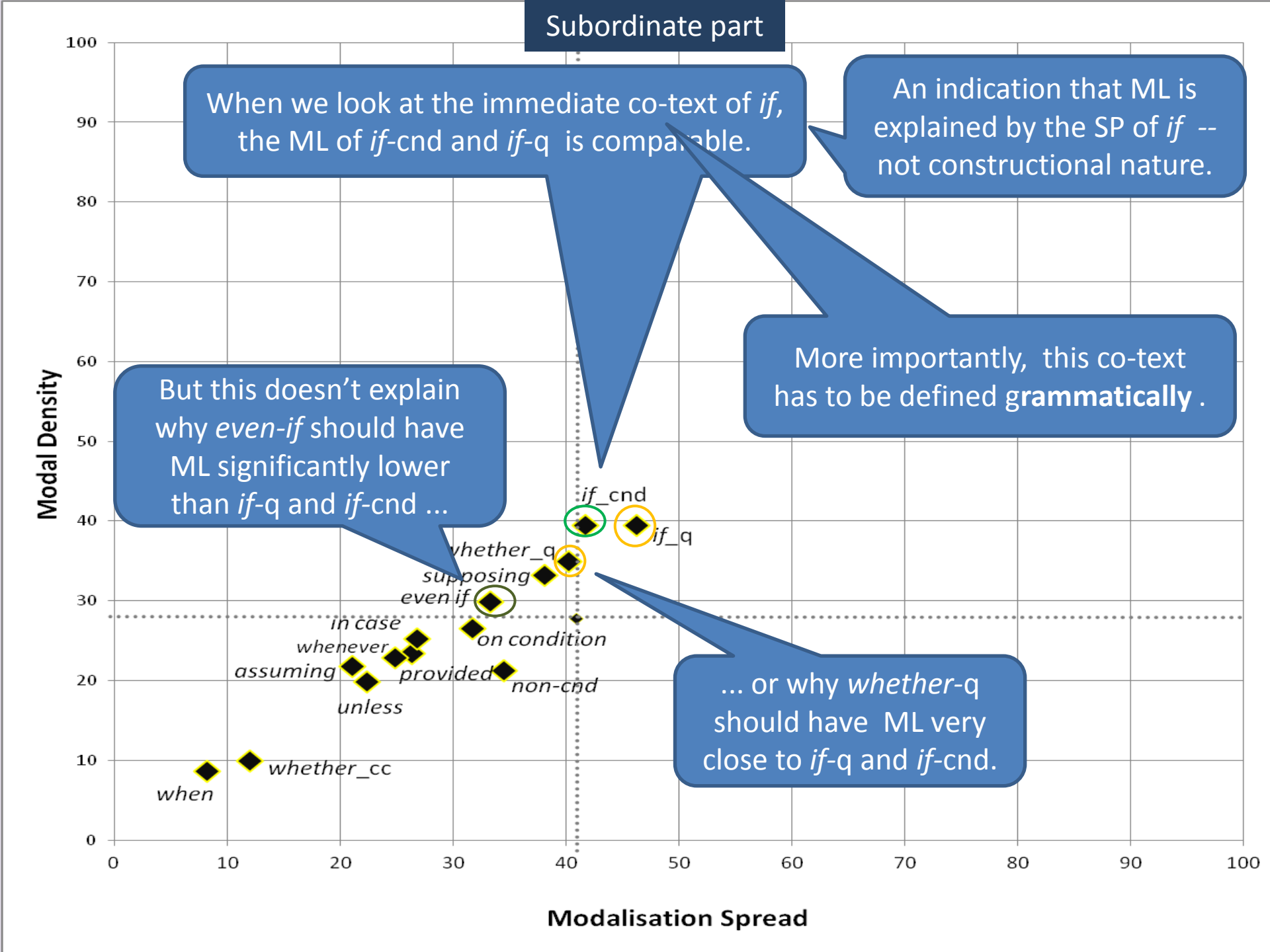
The ML of whole constructions may not reflect the SP of *if* within the usual short collocation span of 4-5 words



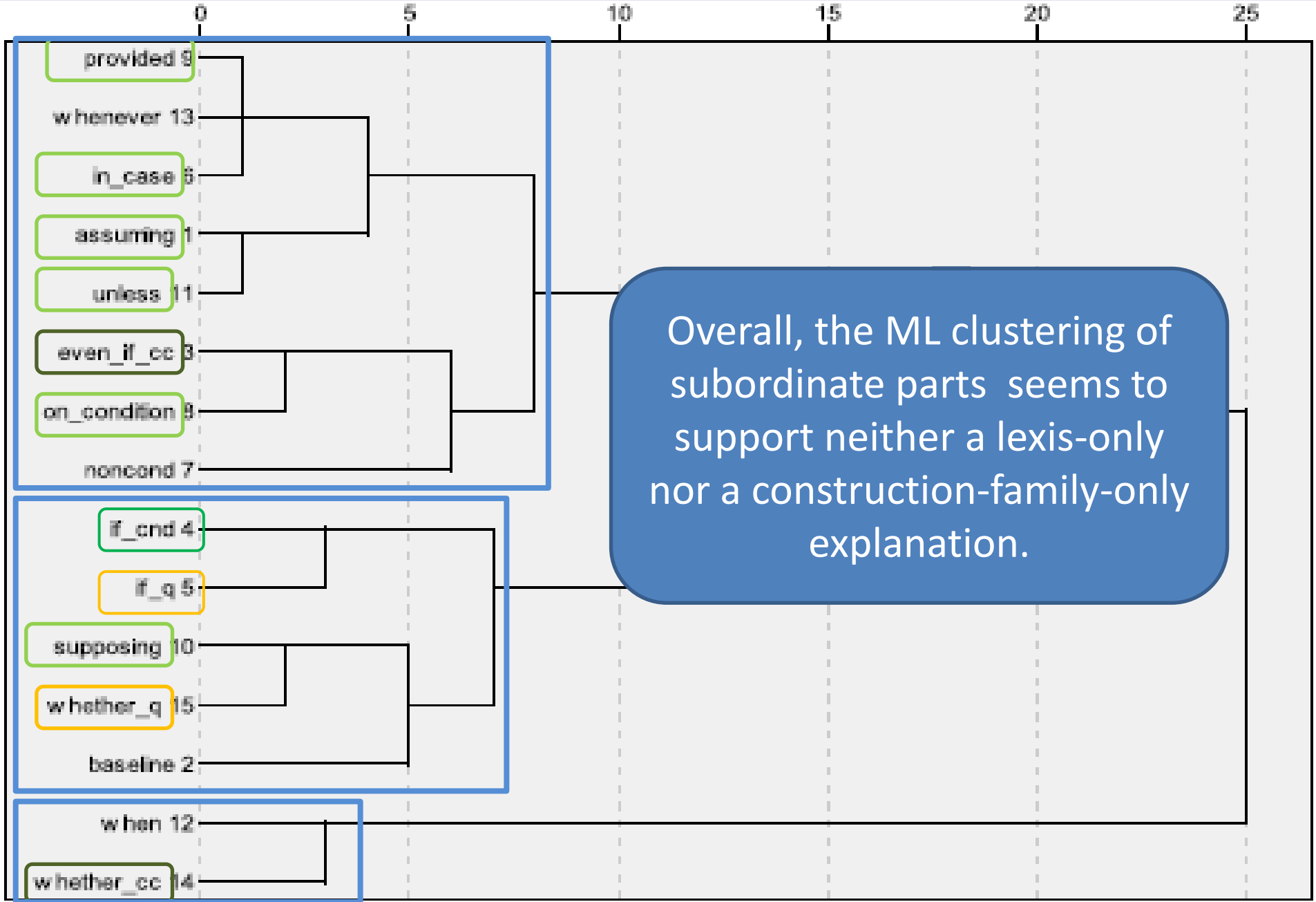
Examination of ML in the subordinate part only


Subordinate part
When we look at the immediate co-text of *if*, the ML of *if*-cnd and *if*-q is comparable.
An indication that ML is explained by th SP of *if* -- not constructional nature.
Modal Density
Modalisation Spread
0
10
20
30
40
50
60
70
80
90
100
*if*_cnd
*if*_q
*whether*_q
supposing
even if
in case
whenever
assuming
unless
provided
on condition
non-cnd
*whether*_cc
when

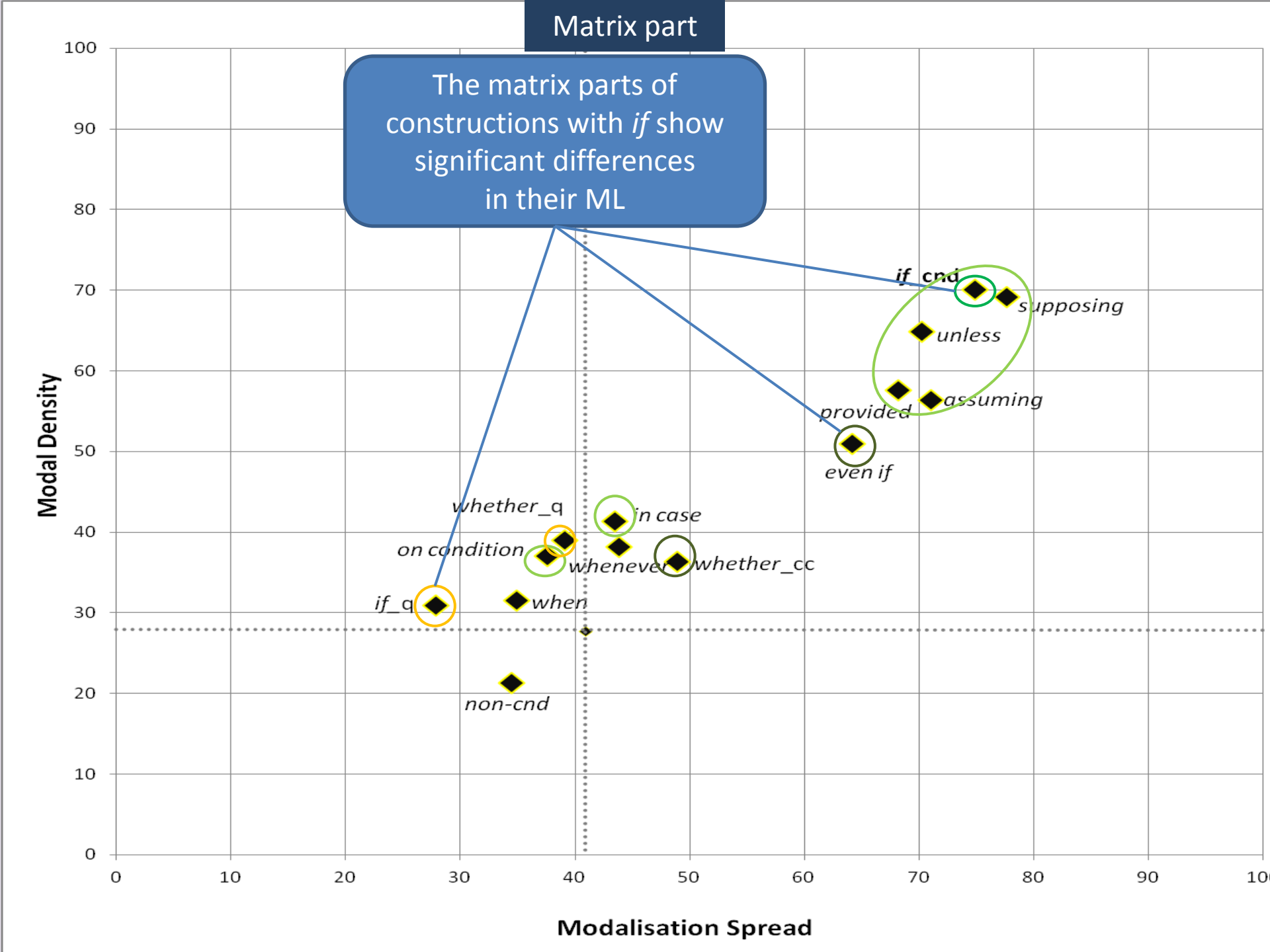

Subordinate part
When we look at the immediate co-text of *if*, the ML of *if*-cnd and *if*-q is comparable.
An indication that ML is explained by the SP of *if* -- not constructional nature.
But this doesn't explain why *even-if* should have ML significantly lower than *if*-q and *if*-cnd ...
... or why *whether*-q should have ML very close to *if*-q and *if*-cnd.
Modal Density
Modalisation Spread
0
10
20
30
40
50
60
70
80
90
100
if_cnd
if_q
whether_q
supposing
even if
in case
whenever
on condition
assuming
provided
non-cnd
unless
whether_cc
when

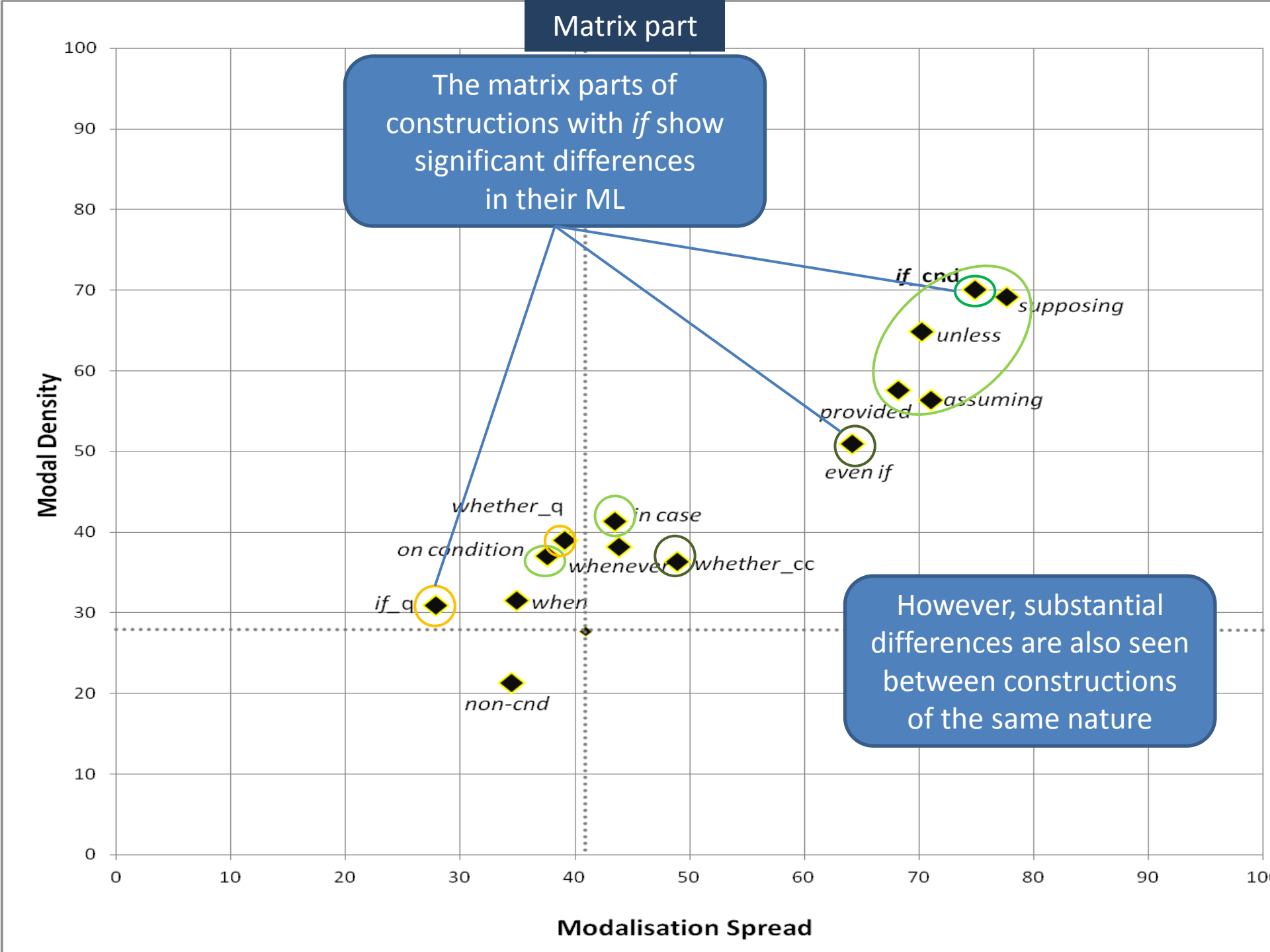

Subordinate part
When we look at the immediate co-text of *if*, the ML of *if*-cnd and *if*-q is comparable.
An indication that ML is explained by the SP of *if* -- not constructional nature.
More importantly, this co-text has to be defined **grammatically** .
But this doesn't explain why *even-if* should have ML significantly lower than *if*-q and *if*-cnd ...
... or why *whether*-q should have ML very close to *if*-q and *if*-cnd.
Modal Density
Modalisation Spread
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100
if_cnd
if_q
whether_q
supposing
even if
in case
whenever
on condition
assuming
provided
non-cnd
unless
whether_cc
when

Subordinate parts: ML clustering



Overall, the ML clustering of subordinate parts seems to support neither a lexis-only nor a construction-family-only explanation.


Matrix part
The matrix parts of constructions with *if* show significant differences in their ML
Modal Density
Modalisation Spread
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
if_cnd
supposing
unless
assuming
provided
even if
whether_q
in case
on condition
whenever
whether_cc
if_q
when
non-cnd


Matrix part
The matrix parts of constructions with *if* show significant differences in their ML
However, substantial differences are also seen between constructions of the same nature
Modal Density
Modalisation Spread
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
if_cnd
supposing
unless
assuming
provided
even if
whether_q
in case
on condition
whenever
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if_q
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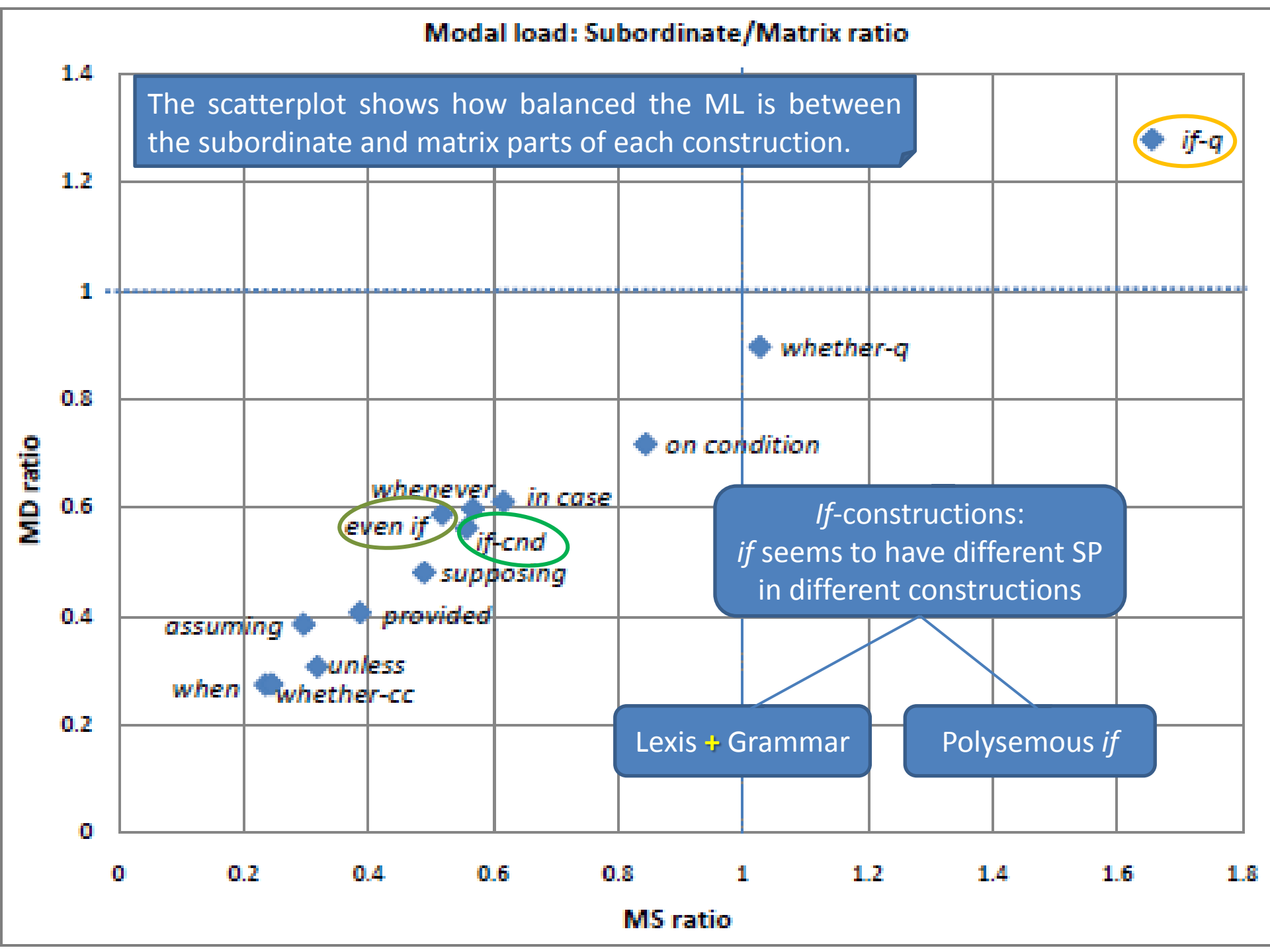
non-cnd


Modal load: Subordinate/Matrix ratio
The scatterplot shows how balanced the ML is between the subordinate and matrix parts of each construction.
MD ratio
MS ratio
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
if-q
whether-q
on condition
whenever
in case
even if
if-cnd
supposing
provided
assuming
unless
when
whether-cc
If-constructions:
if seems to have different SP
in different constructions
Lexis + Grammar
Polysemous if

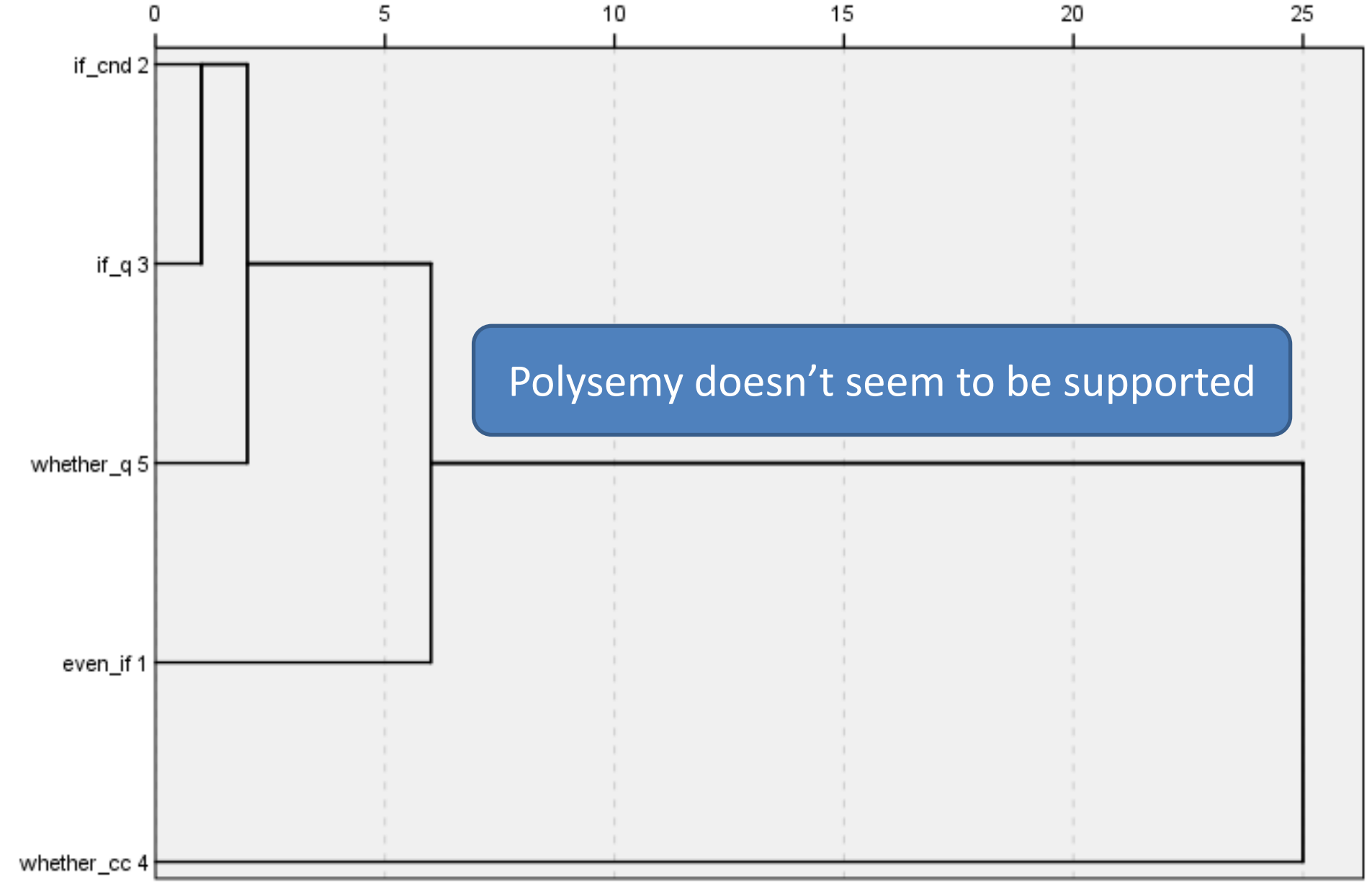
Hypothesis: *if* and *whether* are polysemous:

- if_{cnd} – if_{q}
- $whether_{cc}$ – $whether_{q}$

Assumption: The ML of the subordinate parts of the relevant constructions is a reflection of the respective subordinators' semantic preference

For the hypothesis to stand, the subordinate parts of *if*-cnd must have substantially different ML from those of *if*-q -- with the same holding between *whether*-cc and *whether*-q.

Subordinate parts: ML clustering



The ML of *if*-conditionals cannot be regarded as reflecting on the semantics of *if* alone, but the interaction of its semantics with the semantics of the constructions of which it is a component part.

ML seems to be explained by taking into account both ...
… the SP of the subordinator, and
… the nature of the construction

Which, if any, of the two theories can better accommodate this?

Lexical Grammar

Lexical Item / Extended Unit of Meaning

(Sinclair, 1996: 75, 90; Stubbs, 2009: 123-126)

Components

- The core (a word or phrase)
- Its collocates
- Its semantic preference
- Its semantic prosody
- Its colligations

Lexis independent of grammar

In its current form, LG cannot explain the ML patterns

Restoring Firthian definitions

Colligation

"[F]requent co-selections of a content word and an associated grammatical frame" (Stubbs, 2002: 238).

"[T]he grammatical company a word keeps" (Hoey, 1997: 8; also Sinclair, 2004: 174).

Restoring Firthian definitions

Colligation

"The statement of meaning at the grammatical level is in terms of word and sentence classes or of similar categories and of the interrelation of those categories in colligations. Grammatical relations should not be regarded as relations between words as such – between *watched* and *him* in 'I watched him' – but between a personal pronoun, first person singular nominative, the past tense" (Firth, 1968: 181)

"[F]requent co-selections of a content word and an associated grammatical frame" (Stubbs, 2002: 238).

"[T]he grammatical company a word keeps" (Hoey, 1997: 8; also Sinclair, 2004: 174).

Semantic Colligation

A hybrid of semantic preference and colligation:

"The mutual attraction holding between a sentence class … and a semantic category" (Gabrielatos, 2007: 2).

If-conditionals can be seen as *modal colligations*

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A hybrid of semantic preference and colligation:

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If-conditionals can be seen as *modal colligations*

However …

Not all conditionals have high ML.

The construct doesn't fully account for the bi-partite structure of conditionals.

The construct is a reduced version of a construction.

Constructions

"Conventionalised pairings of form and function" (Goldberg, 2006: 1)

"Symbolic units" with particular features pertaining to their form and meaning (Croft & Cruse, 2004: 257).

Formal properties:
morphological, phonological, lexical, syntactic

Meaning properties:
semantics, (potential) pragmatic uses

(Croft & Cruse, 2004: 258; Fillmore et al., 1988: 501; Fried & Östman, 2004: 18-21)

Accounting for the ML of different conditionals

Interacting dimensions differentiating between members of the family of conditional constructions:

- The modal marker of the protasis.
- The semantic function of the conditional
  (largely determined by the modal marking of the apodosis).
- The nature of P-A link
  (direct or indirect).
- The P-A syntactic link
  (subordination or co-ordination).

(Gabrielatos, 2010: 323-324)

Thank you

For details and references, please see:

Gabrielatos, C. (2010). *A corpus-based examination of English if-conditionals through the lens of modality: Nature and types*. PhD Thesis. Lancaster University. (Available through the British Library: http://ethos.bl.uk/OrderDetails.do?did=1&uin=uk.bl.ethos.539699)